

Amendment to the Claims:

Please amend the claims as follows:

Claim 1 (Currently Amended): A homogeneous liquid low molecular weight ethylene/alpha-olefin polymer having[[:]];:

- a) a number average molecular weight (Mn)₂ as determined by gel permeation chromatography, of less than 25,000;
- b) a total crystallinity, as measured by DSC, of less than 10%;
- c) a pour point₂ as measured by ASTM D97₂ of less than 50°C.

Claim 2 (Currently Amended): The homogeneous liquid low molecular weight ethylene/alpha-olefin polymer of Claim 1, wherein said polymer is a copolymer of ethylene and at least one comonomer selected from the group consisting of ethylenically unsaturated monomers, conjugated or nonconjugated dienes, and polyenes, and wherein the polymer has[[:]];:

- a) a number average molecular weight (Mn)₂ as determined by gel permeation chromatography, of less than 15,000;
- b) a comonomer incorporation of greater than 15 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 7%; and
- c) a pour point₂ as measured by ASTM D97₂ of less than 40°C.

Claim 3 (Currently Amended): The homogeneous liquid low molecular weight ethylene/alpha-olefin polymer of Claim 1, wherein said comonomer is an ethylenically unsaturated monomer selected from the group consisting of the C₃-C₂₀ α-olefins, styrene, alkyl-substituted styrene, vinylbenzocyclobutane, 1,4-hexadiene, and naphthenics, and wherein the polymer has[[:]];:

- a) a number average molecular weight (Mn)₂ as determined by gel permeation chromatography, of less than 11,000;
- b) a comonomer incorporation of greater than 30 mol percent;
- c) a total crystallinity₂ as measured by DSC₂ of less than 5%; and

d) a pour point₁ as measured by ASTM D97₁ of less than 25°C.

Claim 4 (Currently Amended): The homogeneous liquid low molecular weight ethylene/alpha-olefin polymer of Claim 1, wherein the comonomer is an ethylenically unsaturated monomer₁ which is a C₃-C₂₀ α-olefin, and wherein the α-olefin is further selected from the group consisting of 1-propene, isobutylene, 1-butene, 1-hexene, 1-heptene, 4-methyl-1-pentene, and 1-octene; and wherein the polymer has[[:]]:

- a) a number average molecular weight (Mn)₁ as determined by gel permeation chromatography, of less than 9,000;
- b) a comonomer incorporation of greater than 40 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 2%; and
- d) a pour point₁ as measured by ASTM D97₁ of less than 15°C.

Claim 5 (Currently Amended): The homogeneous liquid low molecular weight ethylene/alpha-olefin polymer ~~polymers~~ of Claim 4, wherein the comonomer is an ethylenically unsaturated monomer₁ which is selected from the group consisting of propylene and 1-octene; and wherein the polymer has[[:]]:

- a) a comonomer incorporation of greater than 50 mol percent; and
- b) a pour point₁ as measured by ASTM D97₁ of less than 0°C.

Claim 6 (Currently Amended): A process comprising reacting ethylene and at least one ethylenically unsaturated comonomer at a reaction temperature of at least 80°C₁ in the absence of hydrogen₁ and in the presence of a single site catalyst₁ to form a homogeneous liquid low molecular weight ethylene/alpha-olefin polymer having[[:]]:

- a) a number average molecular weight (Mn)₁ as determined by gel permeation chromatography, of less than 25,000;
- b) a comonomer content of greater than 15 mol percent;

- c) a total crystallinity, as measured by DSC, of less than 10%;
- d) a pour point₂ as measured by ASTM D97₂ of less than 50°C.

Claim 7 (Currently Amended): A pour-point reducing additive comprising a homogeneous liquid low molecular weight ethylene/alpha-olefin polymer having[[;]]:

- a) a number average molecular weight (Mn), as determined by gel permeation chromatography, of less than 25,000;
- b) a total crystallinity, as measured by DSC, of less than 10%;
- c) a pour point₂ as measured by ASTM D97₂ of less than 50°C.

Claim 8 (Currently Amended): The pour-point reducing additive of Claim 7₂ wherein said homogeneous liquid low molecular weight ethylene/alpha-olefin polymer is a copolymer of ethylene and at least one comonomer₂ selected from the group consisting of ethylenically unsaturated monomers, conjugated or nonconjugated dienes, and polyenes, and wherein the polymer has[[;]]:

- a) a number average molecular weight (Mn)₂ as determined by gel permeation chromatography, of less than 15,000;
- b) a comonomer incorporation of greater than 15 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 7%; and
- e) d) a pour point₂ as measured by ASTM D97₂ of less than 40°C.

Claim 9 (Currently Amended): The pour-point reducing additive of Claim 7₂ wherein said homogeneous liquid low molecular weight ethylene/alpha-olefin polymer is a copolymer of an ethylenically unsaturated monomer selected from the group consisting of the C₃-C₂₀ α-olefins, styrene, alkyl-substituted styrene, vinylbenzocyclobutane, 1,4-hexadiene, and naphthenics, and wherein the polymer has[[;]]:

- a) a number average molecular weight (Mn) as determined by gel permeation chromatography, of less than 11,000;

- b) a comonomer incorporation of greater than 30 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 5%; and
- d) a pour point₂ as measured by ASTM D97₂ of less than 25°C.

Claim 10 (Currently Amended): The pour-point reducing additive of Claim 7₁ wherein said homogeneous liquid low molecular weight ethylene/alpha-olefin polymer is a copolymer of an ethylenically unsaturated monomer₁ which is a C₃-C₂₀ α-olefin, and wherein the α-olefin is further selected from the group consisting of 1-propene, isobutylene, 1-butene, 1-hexene, 1-heptene, 4-methyl-1-pentene, and 1-octene; and wherein said polymer has[[:]]:

- a) a number average molecular weight (Mn)₁ as determined by gel permeation chromatography, of less than 9,000;
- b) a comonomer incorporation of greater than 40 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 2%; and
- d) a pour point₂ as measured by ASTM D97₂ of less than 15°C.

Claim 11 (Currently Amended): The pour-point reducing additive of Claim 9₁ wherein said homogeneous liquid low molecular weight ethylene/alpha-olefin polymer is a copolymer of an ethylenically unsaturated monomer, which is selected from the group consisting of propylene and 1-octene; and wherein the polymer has[[:]]:

- a) a comonomer incorporation of greater than 50 mol percent; and
- b) a pour point₂ as measured by ASTM D97₁ of less than 0°C.

Claim 12 (Currently Amend): A synthetic oil for use as a lubricant oil, and comprising the liquid low molecular weight ethylene/alpha-olefin polymer of Claim 1, and wherein said oil has ~~having~~ a kinematic viscosity at 100°C of 4 to 200 centistokes.

Claim 13 (Currently Amended): A homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer having[:];

- a) a number average molecular weight (M_n)₂ as determined by gel permeation chromatography, of less than 25,000;
- b) a total crystallinity, as measured by DSC, of less than 50%; and
- c) a pour point, as measured by ASTM D97, of less than 90°C.

Claim 14 (Currently Amended): The homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer of Claim 13, wherein said polymer is a copolymer of ethylene and at least one comonomer selected from the group consisting of ethylenically unsaturated monomers, conjugated or nonconjugated dienes, and polyenes, and wherein the polymer has[:];

- a) a number average molecular weight (M_n)₂ as determined by gel permeation chromatography, of less than 15,000;
- b) a comonomer incorporation of greater than 10 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 40%; and
- c) a pour point₂ as measured by ASTM D97₂ of less than 80°C.

Claim 15 (Currently Amended): The homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer of Claim 13, wherein said comonomer is an ethylenically unsaturated monomer selected from the group consisting of the C₃-C₂₀ α -olefins, styrene, alkyl-substituted styrene, vinylbenzocyclobutane, 1,4-hexadiene, and naphthenics, and wherein the polymer has[:];

- a) a number average molecular weight (M_n)₂ as determined by gel permeation chromatography, of less than 11,000;
- b) a comonomer incorporation of greater than 12 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 30%; and
- d) a pour point₂ as measured by ASTM D97₂ of less than 70°C.

Claim 16 (Currently Amended): The homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer of Claim 13, wherein the comonomer is an ethylenically unsaturated monomer₁ which is a C₃-C₂₀ α-olefin, and wherein the α-olefin is further selected from the group consisting of 1-propene, isobutylene, 1-butene, 1-hexene, 1-heptene, 4-methyl-1-pentene, and 1-octene; and wherein the polymer has[[:]]:

- a) a number average molecular weight (Mn)₁ as determined by gel permeation chromatography, of less than 9,000;
- b) a comonomer incorporation of greater than 13 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 20%; and
- d) a pour point₁ as measured by ASTM D97₁ of less than 60°C.

Claim 17 (Currently Amended): The homogeneous gel-like low molecular weight ethylene/alpha-olefin polymers of Claim 16, wherein the comonomer is an ethylenically unsaturated monomer₁ which is selected from the group consisting of propylene and 1-octene; and wherein the polymer has[[:]]:

- a) a comonomer incorporation of greater than 15 mol percent; and
- b) a pour point as measured by ASTM D97 of less than 40°C.

Claim 18 (Currently Amend): A process comprising reacting ethylene and at least one ethylenically unsaturated comonomer₁ at a reaction temperature of at least 80 °C₁ in the absence of hydrogen₁ and in the presence of a single site catalyst₁ to form a homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer having:

- a) a number average molecular weight (Mn)₁ as determined by gel permeation chromatography, of less than 25,000;
- b) a comonomer content of greater than 10 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 50%;
- d) a pour point₁ as measured by ASTM D97₁ of less than 90°C.

Claim 19 (Currently Amend): A pour-point reducing additive comprising a homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer having:

- a) a number average molecular weight (M_n)₁ as determined by gel permeation chromatography, of less than 25,000;
- b) a total crystallinity, as measured by DSC, of less than 50%;
- c) a pour point₁ as measured by ASTM D97₁ of less than 90°C.

Claim 20 (Currently Amended): The pour-point reducing additive of Claim 19₁ wherein said homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer is a copolymer of ethylene and at least one comonomer selected from the group consisting of ethylenically unsaturated monomers, conjugated or nonconjugated dienes, and polyenes, and wherein the polymer has[[:]]:

- a) a number average molecular weight (M_n)₁ as determined by gel permeation chromatography, of less than 15,000;
- b) a comonomer incorporation of greater than 10 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 40%; and
- e) d a pour point₁ as measured by ASTM D97₁ of less than 80°C.

Claim 21 (Currently Amended): The pour-point reducing additive of Claim 19₁ wherein said homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer is a copolymer of ethylene and a comonomer₁ wherein said comonomer is an ethylenically unsaturated monomer selected from the group consisting of the C₃-C₂₀ α-olefins, styrene, alkyl-substituted styrene, vinylbenzocyclobutane, 1,4-hexadiene, and naphthenics, and wherein the polymer has[[:]]:

- a) a number average molecular weight (M_n)₁ as determined by gel permeation chromatography, of less than 11,000;
- b) a comonomer incorporation of greater than 12 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 30%; and

d) a pour point₁ as measured by ASTM D97₁ of less than 70°C.

Claim 22 (Currently Amended): The pour-point reducing additive of Claim 19₁ wherein said homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer is a copolymer of an ethylenically unsaturated monomer₁ which is a C₃-C₂₀ α-olefin, and wherein the α-olefin is further selected from the group consisting of 1-propene, isobutylene, 1-butene, 1-hexene, 1-heptene, 4-methyl-1-pentene, and 1-octene; and wherein said polymer has[[;]]:

- a) a number average molecular weight (Mn)₁ as determined by gel permeation chromatography, of less than 9,000;
- b) a comonomer incorporation of greater than 13 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 20%; and
- d) a pour point₁ as measured by ASTM D97₁ of less than 60°C.

Claim 23 (Currently Amended): The pour-point reducing additive of Claim 22₁ wherein said homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer is a copolymer of an ethylenically unsaturated monomer₁ which is selected from the group consisting of propylene and 1-octene; and wherein the polymer has[[;]]:

- a) a comonomer incorporation of greater than 15 mol percent; and
- b) a pour point₁ as measured by ASTM D97₁ of less than 40°C.

Claim 24 (Currently Amend): A synthetic oil for use as a lubricant oil, and comprising the gel-like low molecular weight ethylene/alpha-olefin polymer of Claim 13, and wherein said oil has ~~having~~ a kinematic viscosity at 100°C of 4 to 200 centistokes.